

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
11 December 2003 (11.12.2003)

PCT

(10) International Publication Number  
**WO 03/102225 A1**

- (51) International Patent Classification<sup>7</sup>: **C12Q 1/37**, (74) Agents: **HANLEY, Elizabeth, A. et al.**; Lahive & Cockfield, LLP, 28 State Street, Boston, MA 02109 (US).  
G01N 27/26
- (21) International Application Number: **PCT/US03/16820**
- (22) International Filing Date: **30 May 2003 (30.05.2003)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:  
60/385,021 31 May 2002 (31.05.2002) **US**
- (71) Applicant (for all designated States except US): **WATERS INVESTMENTS LIMITED** [US/US]; 109 Lukens Drive, New Castle, DE 19720 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **BOUVIER, Edouard, S., P.** [US/US]; 29 Peabody Drive, Stow, MA 01775 (US). **COPTON, Bruce, John** [US/US]; 30 Cottage Street, Lexington, MA (US). **GEBLER, John, C.** [US/US]; 160 Ash Street, Hopkinton, MA 01748 (US). **GILAR, Martin** [CZ/US]; 139 King Street, Apt. 207, Franklin, MA 02038 (US). **YU, Ying-Qing** [CN/US]; 4 Lyndon Road, Apt. 9, Milford, MA 01757 (US). **LEE, Peter, Jeng, Jong** [US/US]; 38 Byard Lane, Westborough, MA 01757 (US). **BROWN, Elizabeth, K.** [US/US]; 17A Millers Way, Sutton, MA 01590 (US).
- (81) Designated States (national): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.**
- (84) Designated States (regional): **ARIPO** patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), **Eurasian** patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), **European** patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), **OAPI** patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
- with international search report
  - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: **DESTRUCTIBLE SURFACTANTS AND USES THEREOF**

(57) Abstract: The present invention provides methods for enhancing chemical reactions of molecules, *e.g.*, biomolecules, with destructible surfactants. The chemical reactions may involve and/or be associate with analysis, *e.g.*, solubilizing, separating, purifying and/or characterizing the molecules. In one aspect, the anionic surfactants of the present invention may be selectively broken up at relatively low pH. The resulting breakdown products of the surfactants may be removed from the molecule/sample with relative ease. The invention has applicability in a variety of analytical techniques.

WO 03/102225 A1